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EXAMINER

DO, ANH HONG

ART UNIT PAPER NUMBER

2624

DATE MAILED: 06/03/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.  
09/996,967

Applicant(s)

Suggs

Examiner

Anh Hong Do

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on Feb 17, 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-124 is/are pending in the application.
- 4a) Of the above, claim(s) 21-46 and 52-114 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-20 and 47-51 is/are allowed.
- 6) ☒ Claim(s) 115-120 is/are rejected.
- 7) ☒ Claim(s) 121-124 is/are objected to.
- 8) ☐ Claims \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some\* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\*See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s). 6 6) ☐ Other:

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## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments with respect to claims 1-20, 47-51 and 115-124 have been considered but are moot in view of the new ground(s) of rejection.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 115-120 are rejected under 35 U.S.C. 103(a) as being unpatentable over Eberhard et al. (U.S. Patent No. 5,355,309) in view of Yu (U.S. Patent No. 5,345,319).

Regarding claims 115 and 116, Eberhard discloses:

- at least one first photosensor segment having a plurality of first photosensitive elements for scanning at a first resolution (Fig. 1: at least one detector element segment 12D having a plurality of detector elements 12D for scanning at coarse resolution);
- at least one second photosensor segment having a plurality of rows, each one of the plurality of rows having a plurality of second photosensitive elements for scanning at a second

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resolution, the at least one second photosensor segment adjacent to the at least one first photosensor segment (Fig. 1: at least one detector element segment 14D having a plurality of rows, each one of the plurality of rows having plurality of detector elements 14D for scanning at fine resolution, wherein the at least one second photosensor segment 14D adjacent to the at least one first photosensor segment 12D);

- wherein the plurality of second photosensitive elements has a higher density than the plurality of first photosensitive elements so that an image is scanned at a higher resolution with the plurality of second photosensitive elements than with the plurality of first photosensitive elements (col. 5, lines 1-8, teaches the plurality of second photosensitive elements 14D has a higher density than the plurality of first photosensitive elements 12D (dc) so that an image is scanned at a higher resolution (i.e., fine resolution) with the plurality of second photosensitive elements 14D than with the plurality of first photosensitive elements 12D).

Although teaching scanning an image across the first photosensor segment at a first resolution (col. 5, lines 1-8) and scanning an image across the second photosensor segment at a second resolution (col. 5, lines 1-8), Eberhard does not specifically teach creating a color image of the first resolution using the photosensitive elements of the first photosensor segment and creating a color image of the second resolution using the photosensitive elements of the second photosensor segment. One skilled in the art would have clearly recognized that the system of Eberhard has applicability to a linear or one dimensional array detector (col. 12, lines 57-60) such

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as that in Yu, and this system provides imaging of a relative large object with the benefits of high resolution, but avoiding or minimizing the disadvantages of high resolution (col. 3, lines 6-9).

Yu teaches creating a color image of the first resolution (i.e., green color image signal) using the photosensitive elements of the first photosensor segment (i.e., PD array 40) and creating a color image of the second resolution (i.e., red or blue color image signal) using the photosensitive elements of the second photosensor segment (i.e., PD array 30 or 50) (col. 4, lines 30-37), wherein the system of Yu provides a linear color CCD for an image sensor with a simple construction and enhanced resolution (col. 2, lines 1-4).

Therefore, it would have been obvious to create a color image of the first resolution using the photosensitive elements of the first photosensor segment and to create a color image of the second resolution using the photosensitive elements of the second photosensor segment in Eberhard as taught by Yu in order to enhance the resolution of an image.

Regarding claim 117, Eberhard teaches each of the plurality of first photosensitive elements is substantially a first size and each of the plurality of first photosensitive elements is substantially a second size, wherein the first size being larger than the second size (col. 5, lines 8-10, teaches each of the plurality of first photosensitive elements 12D is substantially a first size and each of the plurality of first photosensitive elements 14D is substantially a second size, wherein the second size being smaller than the first size).

Regarding claim 118, Eberhard teaches memory 46M of computer station 46 for storing the image in its portions (Fig. 8).

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Regarding claim 119, Eberhard teaches memory 44M of controller 44 for selecting photosensor segment (i.e., the scanning path) (Fig. 8).

Regarding claim 120, Eberhard teaches scanning an image across the at least first and second photosensor segments (col. 6, lines 58-66).

*Allowable Subject Matter*

4. Claims 1-20 and 47-51 are allowed.
5. Claims 121-124 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

6. The following is a statement of reasons for the indication of allowable subject matter:

The present invention provides a multiple resolution sensing apparatus comprising a geometric layout and use of a photosensor array constructed to be able to yield multiple resolution resulting images from different sized original images (specification, col. 1, lines 47-50), wherein the photosensor array is relatively inexpensive and easy to manufacture, and the resulting device is also relatively compact and can be used in color contact-type image sensing applications (specification, col. 1, line 66 - col. 2, line 4). Particularly, the following claimed subject matters are not taught by the prior art, taken either singly or in combination:

- density of photosensitive elements within the second photosensor segment is greater than density of photosensitive elements within the first photosensor segment; using some photosensors

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for multiple resolutions while other photosensors are used for only one resolution (see independent claim 1);

- scanning different portions of the same image within photosensor segments having different densities of photosensitive elements; scanning is done using the second plurality of photosensitive elements within the second photosensor but not using the first plurality of photosensitive elements within the first photosensor segment, wherein the second resolution is greater than the first resolution (see independent claim 10);

- automatically selecting resulting image resolution based on an original image, wherein:  
when the original image has a width within a first predetermined range, selecting a first resolution;  
when the original image has a width within a second predetermined range, selecting a second resolution; when the first resolution is selected, scanning the original image at the first resolution;  
and when the second resolution is selected, scanning the original image at the second resolution  
(see independent claim 20);

- at least one third photosensor segment having a plurality of third photosensitive elements for scanning at a third resolution, the at least one third photosensor segment adjacent to the at least one second photosensor segment, wherein the plurality of third photosensitive elements has a higher density than the plurality of second photosensitive elements so that the image is scanned at the higher resolution with the plurality of third photosensitive elements than with the plurality of second photosensitive elements (see independent claim 47 and dependent claim 121).

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***Conclusion***

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

***Contact Information***

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anh Hong Do whose telephone number is (703) 308-6720.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 305-4700 or 4750.

The fax phone number for this Group is (703) 872-9314.

May 30, 2003.

A handwritten signature in black ink, appearing to be "Anh Hong Do", is located at the bottom left of the page.